

Remarks

Claims 1, 7, 15, 19, 23, 26 and 28 have been amended. Claims 4, 16, 20 and 29 have been canceled. Therefore, claims 1-3, 5-15 and 18, 19 and 21-28 are now presented for examination.

In a Final Office Action mailed August 8, 2007, claims 1, 7, 23 and 26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tremaine (U.S. Patent No. 6,775,751) in view of Goldberg (U.S. Patent No. 7,035,656). Applicant submits that the present claims are patentable over Tremaine in view of Goldberg.

Tremaine discloses a method and structure for reducing access latency and contention in a processing. The method detects when the amount of available memory is outside a prescribed range, and responsively selects data blocks for compression (to add to the available memory,) or decompression (to use surplus available memory for uncompressed data,) until the amount of available memory is within the prescribed range. When data blocks are compressed, a DOC is determined and stored as an attribute in the directory entry associated with the data block. A most recently used list of recent data block addresses prevents those, as well those data blocks with poor DOC attributes, from being selected for recompression. All zero data blocks are detected to avoid standard compression/decompression overhead. See Tremaine at Abstract.

Goldberg discloses a network controller for controlling a message over a communication network constantly monitors actually transmitted message from or to a particular user. If the controller determines a particular phrase is transmitted more than a predetermined number of times, the controller updates support data and transmits the data

in a compressed format with support data. The network controller may send an updated support data in response to a request from user equipment. See Goldberg at Abstract.

Claim 1 of the present application recites:

A method comprising:
receiving a string of data symbols; and
compressing the string of data into a fixed sized compressed data block having a plurality of compressed symbols and dictionary elements, the compressed symbols and dictionary elements having a fixed length and a fixed offset within the compressed data block, wherein each of the compressed symbols include encoded tag bits to indicate a type of compression performed on the associated compressed symbol.

Applicant submits that nowhere in Tremaine or Goldberg is there disclosed or suggested compressing a string of data into a fixed sized compressed data block having a plurality of compressed symbols and dictionary elements having a fixed length and fixed offset within a compressed data block. Particularly, Tremaine doesn't disclose or suggest compressing a string of data into a fixed sized compressed data block. The Examiner asserts that Tremaine discloses such a feature. See Final Office Action at Page 2, third paragraph.

However, discloses a "post process output block ranges from just a few bytes to the original block size . . ." See Tremaine at ll. 42-43. Therefore, Tremaine explicitly teaches away from claim 1.

Additionally, Tremaine and Goldberg each fail to disclose or suggest compressed symbols including encoded tag bits to indicate a type of compression performed on the associated compressed symbol. Since neither Tremaine nor Goldberg disclose or suggest compressing a string of data into a fixed sized compressed data block having a plurality of compressed symbols and dictionary elements having a fixed length and fixed offset

within a compressed data block, or compressed symbols including encoded tag bits to indicate a type of compression performed on the associated compressed symbol, any combination of Tremaine and Goldberg would not disclose or suggest such a feature. Accordingly, claim 1, and its dependent claims, is patentable over Tremaine in view of Goldberg.

Independent claims 7, 23 and 26 include limitations similar to those recited in claim 1. Thus, claims 7, 23 and 26, and their respective dependent claims, are patentable over Tremaine in view of Goldberg.

Claims 2-6, 8-9, 11-12, 24 and 27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tremaine in view of Goldberg, and further in view of Castelli et al. (U.S. Patent No. 6,847,315). Applicant submits that the present claims are patentable over Tremaine in view of Goldberg even in view of Castelli.

Castelli discloses a method and structure that stores and/or transmits and receives data in compressed form. Retrieval latencies are reduced by selectively transmitting a portion of the data in uncompressed form. When the apparatus is part of a computer architecture supporting main memory compression, a selected L2 cache line belonging to the unit of main memory compression is kept uncompressed. To minimize decompression latency, the uncompressed L2 cache line is stored with the compressed-memory directory. Alternatively, the uncompressed L2 cache line is stored in the compressed memory together with the rest of the memory compression unit it belongs to. See Castelli at Abstract.

Nevertheless, Castelli does not disclose or suggest compressing a string of data into a fixed sized compressed data block having a plurality of compressed symbols and

dictionary elements having a fixed length and fixed offset within a compressed data block, or compressed symbols including encoded tag bits to indicate a type of compression performed on the associated compressed symbol.

As discussed above, Tremaine and Goldberg do not disclose such features. Therefore, any combination of Tremaine, Goldberg and Castelli would not disclose or suggest such features. Thus, the present claims are patentable over Tremaine in view of Goldberg and Castelli.

Claims 15-16, 19 and 28-29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Franaszek et al. (U.S. Patent No. 5,729,228) in view of Goldberg. Applicant submits that the present claims are patentable over Franaszek in view of Goldberg.

Franaszek discloses a method and apparatus for compressing a block of data using a shared dictionary. Data to be compressed is divided into subblocks which are each provided to a respective compressor in a plurality of compressors. The compressors cooperatively construct a dynamic compression dictionary and compress the subblocks in parallel using the dictionary. Compressed subblocks output by the compressors are concatenated to form a compressed block. See Franaszek at Abstract. The subblocks are then decompressed in parallel (col. 3, ll. 16-20).

Claim 15 of the present application recites:

A method comprising:
receiving a fixed offset compressed data block
having a plurality of dictionary elements and
compressed symbols; and
decompressing each of the compressed symbols in
parallel, by:
analyzing encoded tag bits within a compressed
symbol; and

decompressing the compressed symbol to form a symbol based upon a type of compression indicated by the encoded tag bits.

Applicant submits that neither Franaszek nor Goldberg disclose or suggest decompressing each compressed symbol in a compressed block in parallel. Franaszek discloses subdividing a block into subblocks and decompressing each subblock in parallel. However, there is no disclosure, or reasonable suggestion, of decompressing each symbol within a subblock in parallel.

Moreover, Franaszek does not disclose the compressed data blocks as having fixed offsets. Franaszek explicitly discloses that because the degree of compression is variable, depending on the data, each compressed sub-block will in general be a different size. Franaszek at col. 2, ll. 59-61. Thus, the compressed blocks cannot have a fixed offset.

Additionally, Franaszek does not disclose or suggest decompressing a compressed symbol based upon a type of compression indicated by encoded tag bits. For the above reasons the combination of Franaszek and Goldberg does not disclose or suggest all of the limitations of claim 15, or its dependent claims.

Independent claim 19 includes limitations similar to those recited in claim 15. Thus, claim 19, and its dependent claims, are also patentable over Franaszek in view of Goldberg.

Claims 18 and 20-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Franaszek in view of Goldberg, and further in view of Castelli et al. Applicant submits that any combination of Franaszek, Goldberg and Castelli would fail to disclose or suggest decompressing each symbol within a compressed block in parallel,

or the compressed blocks having a fixed offset, or decompressing a compressed symbol based upon a type of compression indicated by encoded tag bits. Therefore, the present claims are patentable over the combination of Franaszek, Goldberg and Castelli

Claims 13-14 and 25 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tremaine, Goldberg and Castelli, and further in view of Franaszek. Applicant submits that present claims are patentable over any combination of Tremaine, Goldberg and Castelli and Franaszek for the reasons discussed above.

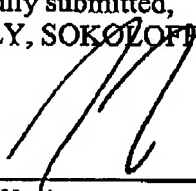
Applicant respectfully submits that the rejections have been overcome, and that the claims are in condition for allowance. Accordingly, applicant respectfully requests the rejections be withdrawn and the claims be allowed.

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,
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